THE WAR IN SOUTH AFRICA.

A FIRST FIELD DRESSING.

By G. Lenthal Cheatle, F.R.C.S.
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Whenever I saw wounds not of recent infliction the following description explains the usual relationship that existed between them and infective or non-infective processes:—

1. The small wound caused by a Mauser or Lee-Metford bullet covered by a scab of dry blood clot, under which healing had practically taken place.

2. A small moist ulcer, from which there was a slight seropurulent discharge which contained cocci and obviously infected. This wound represented a septic condition of 1. The sepsis remaining superficial and not extending to deeper parts.

3. A small moist infected ulcer communicating with the deep parts which were also septic and from which pus could be squeezed.

4. The superficial wound was healed, but the deep parts were infected as was seen to be the case in some chest or abdominal wounds.

In some of the above cases the wounds of entrance or of exit might be represented by the dry scab and the other by one of the effects of infection just described.

5. All the larger wounds, that is to say, those caused by shell or expanding bullets, were almost without exception infected either superficially and deeply, or only superficially.

I cannot give the exact proportion between infected and non-infected cases, but my own experience is that the cases which were quite free from infection were in the minority, perhaps a large minority. The average of cases free from infection was lowered by those from Jacobsdal, Paardeberg and Osfontein, but even without them the statement holds good. It is a well known fact that all wounds in military or civil surgery become infected at the time of their infliction or within a few hours afterwards. This is therefore the most critical time of a wound from the point of view of asepsis. Hence, one concluded that it might be possible to add some precautionary measure to the already valuable first field dressing which is stitched into the jacket of every soldier's uniform in which he fights. Without entering into details this first field dressing consists of antiseptic gauze and wool, together with a strip of bandage, the whole being contained in a little bag of mackintosh or parchment. This dressing is often placed upon the wounds by the patient himself, by his nearest neighbour, officer, or private, or by a medical officer. By whomever it is applied, under the exigencies of circumstances, it is almost invariably put on in the absence of a purifying lotion, and hence apart from what the bullet or portion of shell takes into the wound, the patient's skin, fingers and clothes or the fingers of his dresser are the chief sources from which infection is derived.

It is quite evident that a first field dressing cannot include all the paraphernalia we deem necessary to establish asepsis in hospital practice, but at the same time I venture to hope that something might be included with very little additional complication that could inhibit bacterial growth and which could also exert some germicidal action.

After trying iodoform made into a paste with a 1 in 20 watery solution of carbolic acid—which, however, proved unsatisfactory—I used the double cyanide of zinc and mercury salt in the form of powder, with which Lord Lister had kindly supplied me on leaving this country. I found, however, that when applying it to a wound in the open air the wind blew more of it over myself than over the area for which it was intended. Besides this, any powder is difficult to apply to the posterior aspects of the trunk and limbs without greatly disturbing a patient by rolling him over on his face.

Then I employed this same double cyanide of zinc and mercury powder made into a paste with a 1 in 20 watery solution of carbolic acid. This paste had the advantage of the germicidal action of the carbolic acid added to the great inhibitory power exerted over bacterial growth by the double salt. It could be applied anywhere and in any wind, and further, in spite of using it in large quantities and in large wounds, I have not seen any poisonous effects nor any signs of local irritation. In fact, this paste proved most satisfactory. In using it I rubbed some over my fingers, over the skin around the wound, and upon the wound itself before putting on the first field dressing. It was, of course, difficult to carefully observe cases that were being left behind or sent away by convoy, but every now and then I was able to see them again, and they were all doing well, the wounds being all represented by a dry scab, in which by careful inspection the double salt could be seen.

Since I have returned home I have worked out the amount that would be necessary for each field dressing and the method by which it can be carried. A tin collapsible tube, the same as artists use for their oils, is the best carrier for the paste, which does not chemically act upon the tin. By applying vaseline to the possible outlets for evaporation the paste will remain as such for years, even in hot climates. The best proportion of the double cyanide of zinc and mercury powder to the carbolic acid solution has been worked out by Mr. William Martindale and myself, and is as follows: Mercury and zinc cyanide, 400 grs.; tragacanth in powder, 1 gr.; carbolic acid, 40 grs.; sterilised water, 800 grs. Mix and fill 12 collapsible tin tubes.

The tragacanth helps to keep the powder in suspension. The addition of glycerine is not to be recommended, as it might interfere with the rapidity with which the wounds become scabbed over. The tube and paste weigh 110 grains. Its presence does not appreciably increase the dressing by weight or bulk.

In my opinion this paste proves an invaluable addition to a first field dressing, and its value cannot be over-estimated in in those instances where water cannot be found to make the necessary lotions in the field hospitals.

All that is required in the way of direction for its use is that the dresser should squeeze out some of the paste upon his own fingers before applying it around and on the wound, and after this apply the outer dressings and bandage.

It may be said that these precautions are too intricate for the surgical instincts of the ordinary soldier, but if he is carefully taught the use of the dressing I cannot see that this objection is insuperable.

To sum up: A first field dressing should consist of a collapsible tube containing this paste, double cyanide gauze, and double cyanide wool, each in sufficient quantity for two wounds and a bandage with four safety pins, the whole being enclosed in a mackintosh bag.

NOTES ON DYSENTERY;

FROM THE IMPERIAL YEOMANRY HOSPITAL, SOUTH AFRICA.

BY

Owen Richards, M.A., Fellow of New College, Oxford. and J. W. Washbourn, M.D., Physician to Guy's Hospital; Physician to the London Fever Hospital; etc.

Up to the present date 250 cases of dysentery have been treated in this hospital. Most of these cases were admitted some time after the beginning of the attack, and by themselves are of little value in forming a clinical picture of the disease. We have, however, notes of 20 cases which have been treated here from the commencement, and the following description is based partly upon these cases and partly upon an analysis of the cases admitted at various stages of the disease. For convenience of description we will divide our cases into four classes, A, B, C, and D.

Class A.

These cases are unattended by pyrexia; the other symptoms are similar to those in Class B—that is, the passage of blood and slime. Four of our 20 cases belonged to this class; they were readily amenable to treatment, 3 of the patients recovering in 3, 5, and 6 days respectively, while in the fourth case, which was of longer duration, the patient was twice discovered taking improper food. In a fifth case, which recovered in 5 days, there was pyrexia for one night only, the temperature reaching 101.4°.

Class B.

Of our 20 cases, 14 belonged to this class, which is character-

ised by a fairly definite pyrexial stage, reminding one of the course of a specific fever. The pyrexia, which is irregular in type, reaching 101° to 103°, with morning remissions, starts at the commencement of the attack, and lasts about 6 days—in the 14 cases 4, 3, 6, 4, 6, 4, 5, 8, 8, 6, 8, 5, 6, 8 days respectively. The onset is frequently preceded by ordinary diarrhœa lasting a day or two. The principal symptoms of the attack are tenesmus with repeated calls to stool, and the replacement of the normal fæcal evacuations by blood and slime. In favourable cases, as the temperature falls the evacuations gradually assume a more fæcal character, and an ordinary diarrhœa persists for a day or two longer, the whole attack lasting about 9 days.

Chart I shows the course of the temperature and the number of evacuations in a typical case of this class ending in recovery. The patient, Private S., a previously healthy man, was under the care of Dr. Breeks, and was treated with magnesium sulphate.

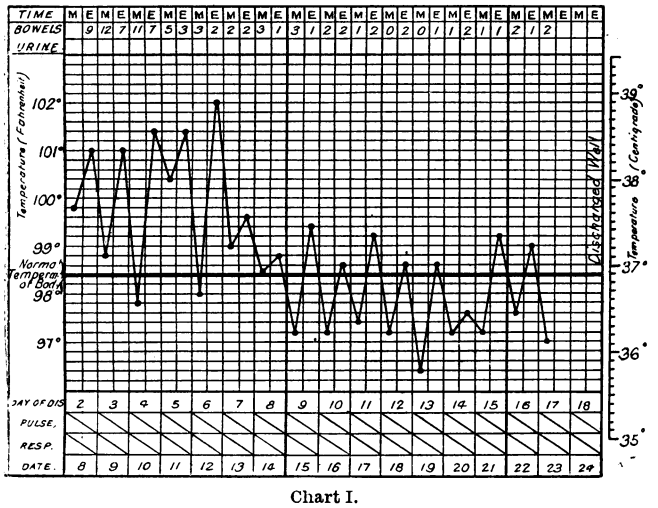

Chart I.

Of these 14 cases, in 5 who were convalescing from disease other than enteric, the course of the attack corresponded very closely with the above case. In two others who were convalescent from enteric, diarrhœa continued for 17 and 21 days. In the ninth case, Private A., under the care of Dr. Breeks, the symptoms began in the usual way, with pyrexia lasting for 7 days. Shortly after the fall of the temperature the motions became fæcal. The diarrhœa, instead of subsiding, continued for five weeks, the bowels being open on an average nine times a day. He became much emaciated, and the abdomen was retracted. Recovery ultimately ensued. He was treated with ipecacuanha, magnesium sulphate, opium, and bismuth. This patient was convalescent from enteric fever at the time when he was attacked, which probably was the cause of the protracted course of the disease. The remaining 5 cases in this class, who were all convalescent from enteric fever, ended fatally.

The attack began with the usual pyrexial stage. In one case death occurred on the 7th day, before the fall of temperature, and in the others after the temperature had subsided, on the 11th, 12th, 13th, and 14th days of the attack respectively.

This unfavourable course was, we believe, due to the lowered resistance consequent on the attack of enteric fever. In two of the cases typhoid ulcers were found at the necropsy, in another there was still evidence of enteric in the enlargement of the spleen and mesenteric glands, and in the other two the patients were much enfeebled before the dysentery commenced. The Charts II, III, IV, and the following brief notes, illustrate these cases.

Private T. S., under the care of Dr. Richmond, admitted on May 13th, convalescent from enteric, temperature having been normal for four days. On May 19th he suffered from diarrhœa, and on May 20th he began to pass blood and slime, the temperature rising to 101.4°. In spite of treatment, the dysenteric symptoms continued, and the pulse gradually failed. He died on May 26th. At the *post-mortem* examination, dysenteric ulceration was found in the rectum, sigmoid flexure, and cæcum, together with small patches in the rest of the colon. The lower end of the ileum was inflamed; the spleen and mesenteric glands were enlarged. The patient was treated with ipecacuanha, opium, and astringents.

Private O., under care of Dr. Handson. Admitted on May 5th suffering from relapse of enteric. The relapse was severe, temperature varying between 103° and 104°. It became normal on May 23rd, and continued so until June 10th, when it rose to 99.6° in the evening. On this day the patient suffered from diarrhœa. On the 11th it reached 103.2° in the evening; diarrhœa continued. The motions were at first fæcal and subsequently consisted of nothing but blood and slime. The temperature became normal on June 16th; the dysentery continued: hiccough developed, and persisted during the last five days of life. The patient died on the 23rd. No *post-mortem* examination was made. This patient was treated with opium, bismuth, ipecacuanha, and magnesium sulphate.

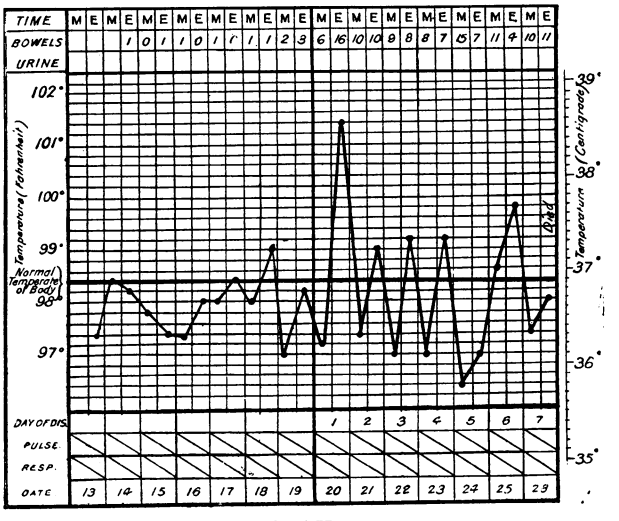

Chart II.

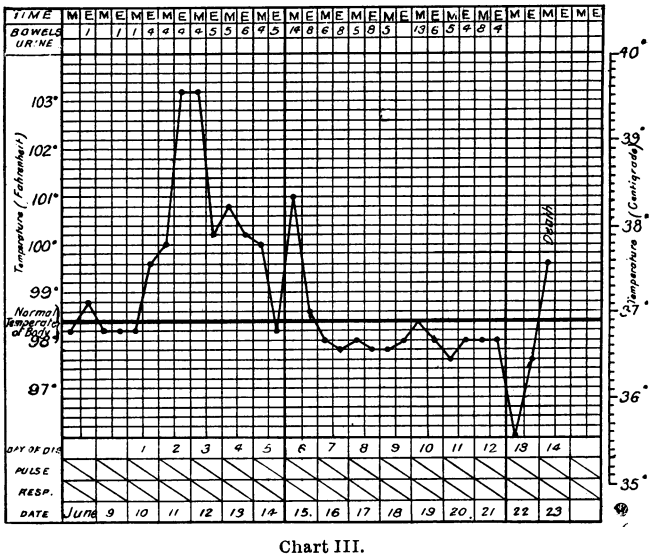

Chart III.

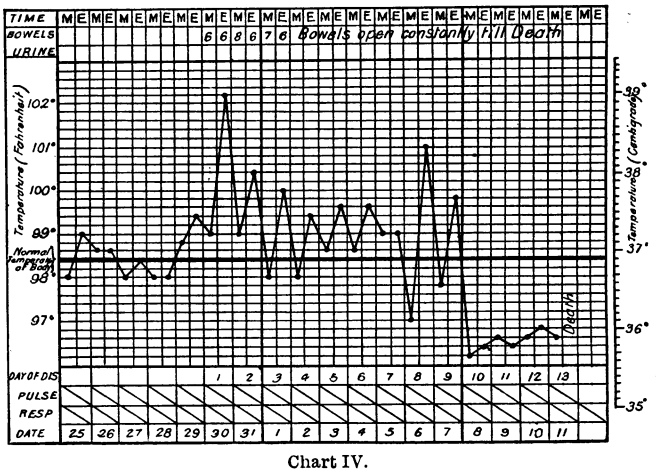

Chart IV.

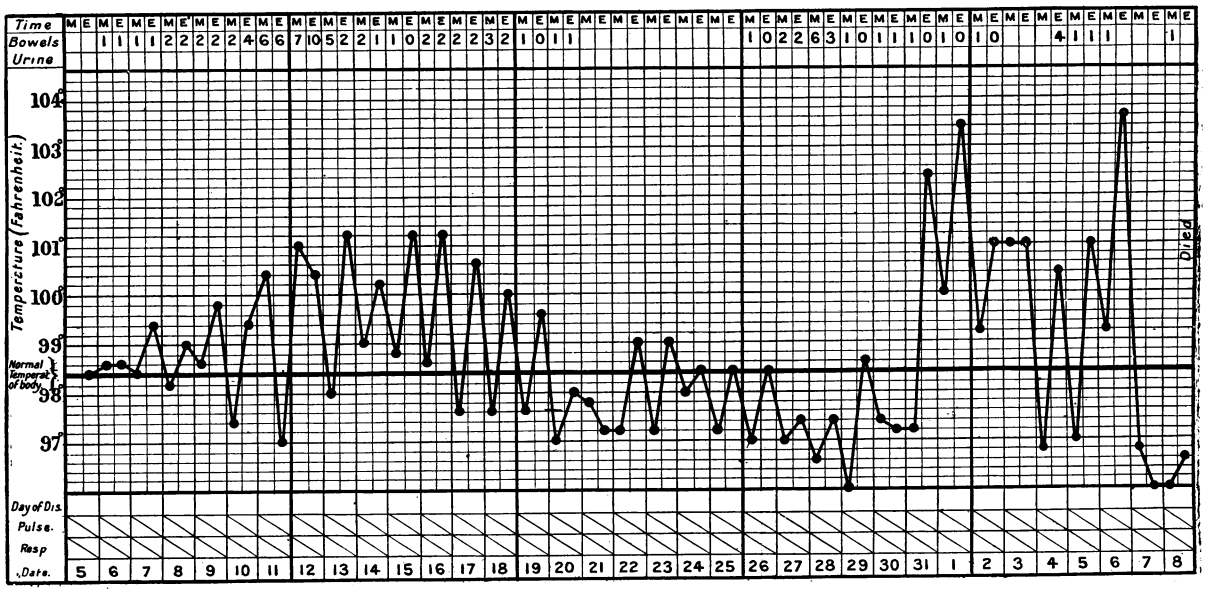

Chart V.

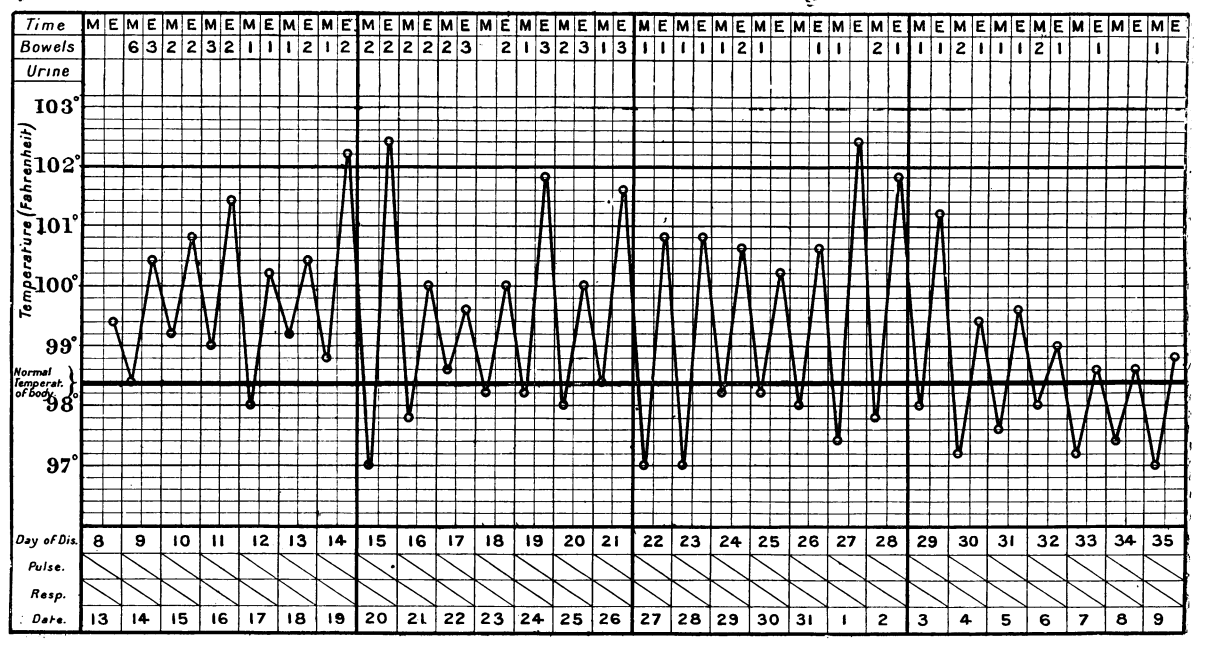

Chart VI.

Private P., admitted May 24th, under the care of Dr. Handson. Had been ill 24 days with enteric, temperature having been normal for more than a week. His temperature remained normal till May 29th. On May 30th, his bowels were open twelve times, and he passed blood and mucus. On June 2nd, the bowels were opened constantly, with passage of blood and slime, which continued till he died. On June 3rd, his pulse was very feeble. On the 4th, he suffered from great thirst, and the abdomen became retracted. He rapidly emaciated, and died on June 11th. At the *post-mortem* examination, the whole of the large intestine and the lower two feet of the ileum were acutely congested and thickened, and there was severe dysenteric ulceration, most marked in the rectum. On the first day of the attack he was treated with ipecacuanha (two doses, 30 gr. each), followed by opium and bismuth; on the fourth day with magnesium sulphate; and on the fifth day ipecacuanha was again tried. At various times morphine suppositories, copper sulphate, and different preparations of opium were administered.

COMPLICATIONS.

In the case of Private A. above quoted the diarrhœa, instead of ceasing about the tenth day, continued for five weeks, and it is probable that many of the numerous cases admitted into the hospital some time after the commencement of the attack were cases of this nature reaching us after the pyrexial stage had passed. In some of these latter cases, however, the prolongation of the dysentery was due to a distinct relapse attended by the usual pyrexia—for example, the case of Private J. W. below quoted. In others it was due to a relapse unattended by pyrexia.

As regards other complications, perforation of the intestine and consequent peritonitis has occurred in several cases, and

in one or two a temporary enlargement of the liver with pyrexia has occurred during convalescence. In another case, previously quoted in the BRITISH MEDICAL JOURNAL of June 16th, 1900, p. 1455, the enlargement of the liver was followed by hemiplegia. This was supposed to be due to a cerebral embolism.

As these cases were not seen from the commencement, we are uncertain to which of our classes they belong. In the following case, however, which from the nature of the relapse appeared to belong to Class B, the enlargement of the liver was due to the formation of an abscess. (See Chart V.)

Private J. W., admitted May 5th, under the care of Dr. Elliott. He had had dysentery twice before during the last six months. The present attack began on March 26th with passage of blood and slime, at which time he stated that his temperature was raised, on one occasion to 101°. For ten days before admission the bowels had been normal. On May 10th, five days after admission, he had a relapse of dysentery, his temperature being raised to 101°. The temperature continued raised till May 19th, by which time the dysentery had ceased. The temperature then fell, and remained nearly normal till May 31st, when it rose to 102.6°. The liver subsequently became enlarged, and pleurisy developed on the right side. On June 8th Mr. Raymond Johnson opened an abscess in the upper part of the right lobe of the liver. This, however, did not relieve the patient, who died on the same day. At the *post-mortem* examination extensive dysenteric ulceration was found in the large intestine, and a second abscess was discovered in the lower part of the same lobe.

This is the only case of hepatic abscess which has been observed in this hospital.

CLASS C.

We have notes of only 3 cases of this class, none of which were seen from the beginning. From the accounts given by the patients the attacks began with the usual symptoms of dysentery, namely, the passage of blood and slime.

The patients had been ill 7, 10, and 12 days before admission. Subsequently to admission the symptoms were diarrhœa, with motions of a brown colour, accompanied by pyrexia, and lasting for 24, 25, and 19 days respectively. In each case the course of the temperature and the character of the diarrhœa raised the suspicion of enteric. In 2 of these cases this view was strengthened by the enlargement of the spleen. None of the cases, however, gave a reaction with the typhoid bacillus in a dilution of 1 in 20, and the general condition of the patient and the appearance of the abdomen were not like those found in enteric; in fact, in two of the cases the abdomen was distinctly retracted.

Chart VI and the following short notes illustrate this type:

Quartermaster-Sergeant L. was admitted on May 13th under care of Dr. Elliott. He had been ill for a week with abdominal pain and straining, and the passage of blood and slime. The onset was marked by continued vomiting. On admission the temperature was raised, and pyrexia continued for over three weeks (*vide* chart). He suffered from diarrhœa, the motions being of a brownish colour, but neither blood nor slime were passed. On May 22nd a sausage-shaped swelling, probably due to thickening of the intestine, was to be felt in the situation of the sigmoid flexure, and continued to be felt for a week. On June 4th the temperature began to fall, and on June 7th it was normal. As the temperature fell the motions became formed and the patient became convalescent. On June 7th his blood was tested, and failed to give the Widal reaction in a dilution of 1 in 20. He was treated with opium, bismuth, ipecacuanha, and salol.

CLASS D.

We have only seen one case of this class, but as it was seen from the beginning of the attack, and a *post-mortem* examination was made, it is especially instructive. During life the case was considered to be one of enteric fever. This diagnosis was supported by the fact that his blood gave the typhoid reaction.

He was in hospital for 19 days, having suffered for a week previously from *malaise*. The pyrexia was similar to that of a case of enteric fever: the bowels were at first constipated; subsequently there was diarrhœa; the motions were of a brown colour. At no time was blood or slime observed in them. He died of peritonitis caused by perforation of the large intestine, and at the *post-mortem* examination typical dysenteric lesions were found. The following are brief notes with Chart (VII) of this case:

Orderly H., admitted into hospital May 13th, under care of Dr. Fitzhugh and Dr. Richmond. Had been ill for a week with cold in the head, aches and pains and feverishness. Two days ago there was slight diarrhœa and tenderness of the abdomen. Temperature was 101° on admission. The spleen was not felt. The tongue was thickly coated with yellowish fur.

May 15th.—Bowels have not been opened since admission. An enema given. There is retention of urine requiring the use of a catheter. Patient's blood gave an immediate Widal reaction to-day with a dilution of 1 in 20.

May 18th.—Abdomen tumid. Enteric fever diagnosed.

May 20th.—Complains of headache and pains in the back. Still retention of urine.

May 21st.—Still abdominal pain.

May 24th.—Has had diarrhœa for several days. There is a rash over the trunk and arms, probably due to administration of urotropin.

May 26th.—Rash gone. Still diarrhœa. The patient frequently vomits. Low muttering delirium.

May 28th.—Abdomen distended.

May 31st.—Distension of abdomen enormously increased. Liver dulness absent. Continues to vomit.

The pulse gradually failed, and the patient died on June 1st. He was treated with bismuth, urotropin, morphine, nux vomica, and digitalis.

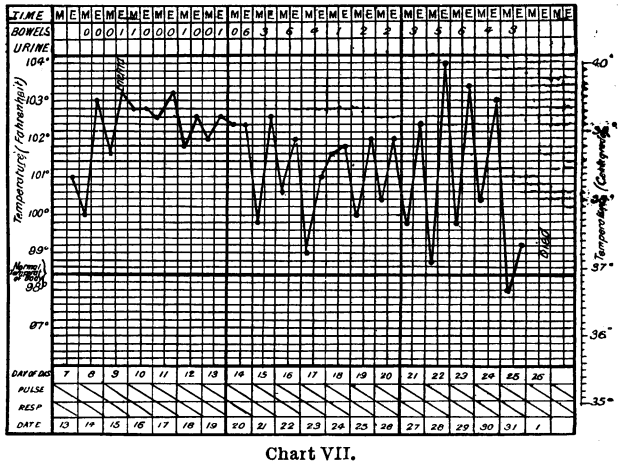

Chart VII.

At the *post-mortem* examination, which was performed by Dr. Handson the peritoneum was covered with lymph, there was a large quantity of liquid fæcal matter and purulent fluid in the peritoneal cavity. Perforations were found in the sigmoid flexure, descending and transverse colon. The intestines were matted together. The mesenteric glands of the small intestine were normal, whilst those of the large intestine were slightly enlarged. The large intestine was slightly thickened, the mucous membrane congested, of a greenish black colour, with numerous petechiæ. There were a great number of minute punctate ulcers with sharply-cut edges and several large ulcers from half to one inch in diameter with ragged edges and gangrenous bases. About half-a-dozen of these large ulcers had perforated, the perforations being circular and about an eighth of an inch in diameter. The whole of the large intestine was more or less affected, but the rectum, sigmoid flexure, and transverse colour had suffered more severely than the rest. The mucous membrane of the small intestine was pale, except the Peyer's patches which were stained a purplish colour. Except for this coloration there was no evidence that Peyer's patches had been affected. The liver was large, soft, and pale; the spleen was small.

TREATMENT.

From our experience here we have no doubt that both ipecacuanha and magnesium sulphate have a specific action. The method adopted here for administering these drugs has been described by one of us already.[1] We believe ipecacuanha to be the most efficacious, for we have seen cases which have resisted the action of magnesium sulphate cured by ipecacuanha. De-emetinised ipecacuanha is not so valuable as the ordinary ipecacuanha, and we do not recommend its use.

The diet is of the greatest importance. As a rule it should be restricted to milk until the motions have become normal. Meat appears to be especially harmful, and it is a common experience to find diarrhœa recurring when a meat diet is commenced.

After the acute symptoms have subsided bismuth, morphine, and astringents are of great value. In some cases where there has been frequent tenesmus morphine suppositories have apparently saved the patient's life.

PATHOLOGY.

We have examined microscopically the excreta in numerous cases of dysentery, and have never discovered amœbæ. The pus removed during life from the hepatic abscess above quoted contained no amœbæ. It contained, however, a large number of bacteria, of which some were bacilli belonging to the coli group, while others were streptococci.

Dr. Handson has made *post-mortem* examinations of 9 cases of dysentery dying in the hospital. In 3 cases death was due to peritonitis from perforation; in 1 case death was due to hepatic abscess; in 2 cases, in addition to the dysenteric ulceration of the large intestine, there was recent typhoid

[1] BRITISH MEDICAL JOURNAL, June 16th, 1900, p. 1455.

ulceration in Peyer's patches; in the remaining 3 the patients had recently suffered from enteric, though there was no ulceration of Peyer's patches obvious at the necropsy. The lesions in the large intestine were such as are usually described in dysentery, thickening of the wall with, in all cases, considerable ulceration. In some cases the whole of the large intestine was affected. In all cases the rectum was the part most severely ulcerated, and next to that the cæcum.

REMARKS.

In the above description we have distinguished four clinical types of dysentery. And the question arises whether these types are simply clinical varieties of the same disease, or whether they are distinct diseases due to different causes.

The first type (Class A) appear to be simply mild forms, without much constitutional disturbance. The second type (Class B) seem to be a distinct clinical entity, with a definite pyrexial stage, like that of a specific fever. In the cases which died the fatal event appear to have been due to the lowering of resistance caused by recent enteric. Except for the result, the clinical course was similar in the whole of the cases forming this class. This view is supported by the fact that of the 9 non-fatal cases the 3 most severe occurred in patients convalescent from enteric.

The single case in Class D ran a very different course to that of Class B. The symptoms were so similar to those of enteric fever, that a mistake in the diagnosis was made. The usual dysenteric symptoms—tenesmus and the passage of blood and mucus—were absent. The patient had not been inoculated, nor had he a previous attack of enteric. His blood, nevertheless, gave the typhoid reaction. Unfortunately the highest dilution used was 1 in 20, and we know that with diseases other than enteric the reaction is sometimes obtained with this low dilution. There was no evidence of enteric at the *post-mortem* examination, and the Peyer's patches, except for a slight discoloration, appeared to be normal; the mesenteric glands and spleen were not enlarged. As the patient belonged to our detachment, we knew that there was no recent history of enteric. We have seen sporadic cases of ulcerative colitis in England running a precisely similar course.

The cases in Class C while under observation ran a somewhat similar course to the above case, and, indeed, in all of them the question of enteric was raised. The history of these cases, however, showed that they began with the usual dysenteric symptoms, and, viewed from a purely clinical standpoint, they would appear to form a link between Classes C and D. Without actual pathological evidence of the causation of dysentery it is impossible to assert whether these different clinical types belong to the same disease. Nevertheless, we have thought that an attempt to distinguish between clinical types may be of some assistance when the true pathology of this disease is more thoroughly investigated.

A CASE OF ENTERIC FEVER ASSOCIATED WITH MALARIA.

By Major M. T. YARR, F.R.C.S.I., R.A.M.C.,
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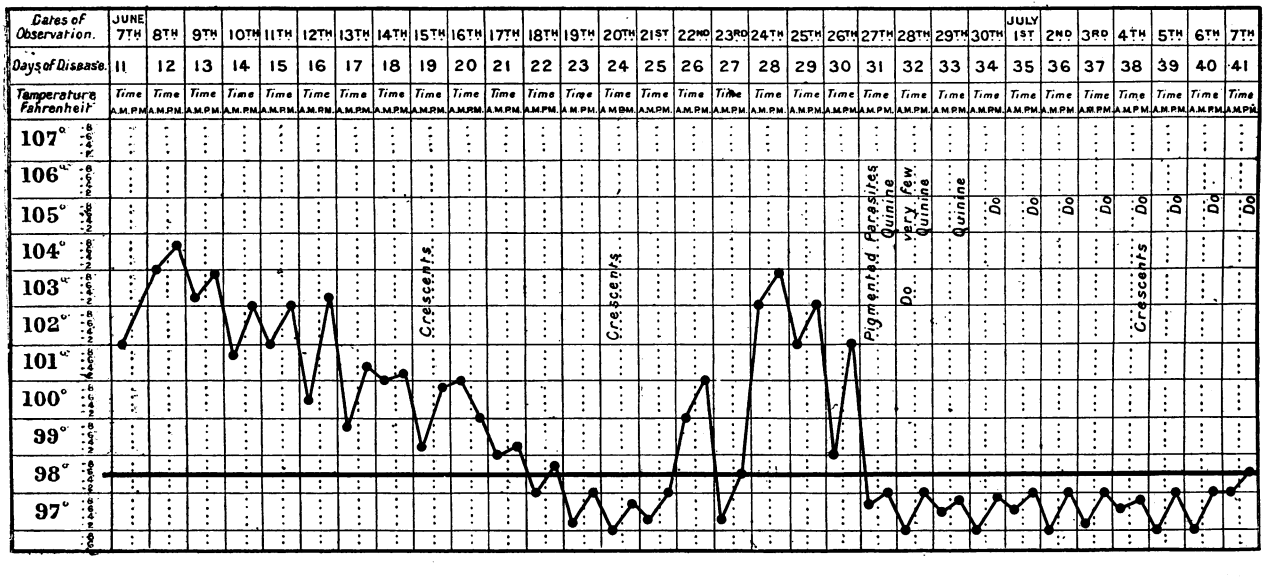
THE following case should prove of interest, more especially to students of tropical medicine. So far as I know—I have no opportunity of consulting works of reference here—no case has previously been recorded of the discovery of the malarial plasmodium in the blood of a patient suffering from typhoid fever. Dr. Osler, in the chapter on typhoid fever in his work on *The Principles and Practice of Medicine*—a chapter so exhaustive that it amounts to a monograph on the subject—writes as follows (page 33, 1898 edition): "Malarial and typhoid fevers may be associated, but a majority of the cases of so-called typho-malarial fever are either remittent malarial fever or true typhoid. *It is interesting to note that among my 685 cases of typhoid fever, in not a single instance were the plasmodia found in the blood during the course of the disease.* Many of our typhoid fever cases came from malarious regions." Again (page 39), he adds: "Typhoid fever and malarial fever *in rare instances* may coexist in the same patient. Of 685 cases of typhoid fever, almost all with blood examinations, and a majority of them coming from malarious regions, in not a single instance were the malarial parasites found in the blood during the fever. There is now no excuse whatever for the continued use by practitioners of the term 'typho-malarial' fever, and still less for the falsification of vital statistics by death certificates signed with this diagnosis. The principle is bad and the practice worse, since it gives a false sense of security, and may prevent proper measures of prophylaxis." The italics are mine. On the other hand, Dr. Manson (*Tropical Diseases*, page 109) remarks: "Well-marked fluctuations of temperature and the appearance of the plasmodium in the blood in the course of a continued fever do not exclude typhoid. These cases are typho-malarial, and have to be treated as such—as typhoid with a malarial complication." I have had many conversations with Dr. Manson on malaria; in fact, the knowledge I have of the subject is mainly due to his teaching and direction; but I have no recollection of his ever alluding to a specific instance of plasmodia in the blood of a typhoid patient. Kelsch and



Major Yarr's Case of Enteric Fever with Malaria.

Kiener have described a modification of bilious remittent fever under the name of "typhoid remittent," but this designation is somewhat unfortunate, as the disease called by this name is remittent fever associated with the so-called "typhoid state," and characterised by a low delirium, brown tongue, prostration, etc.; it is undoubtedly a convenient term, but is wanting in scientific accuracy, and liable to convey a false impression.

I am bound to add that in the following case I was unfortunately unable to employ Widal's serum test, and that I am well aware that it is occasionally difficult to diagnose typhoid from malarial fever. The class of cases of malarial fever, however, which sometimes presents difficulties as regards diagnosis, belong to the category of Kelsch and Kiener's "typhoid remittents"; at least, such is my experience, and do not present any points of resemblance to the comparatively mild case of typhoid fever which I am about to relate.

Lieutenant H., aged 23, who arrived in South Africa from Burmah last February, was admitted to this hospital from the Vaal River on June 7th, suffering from enteric fever. He was very thin and weak, and stated he had been suffering from "diarrhœa and weakness" for the previous ten days. He had not been inoculated. During the year in which he had been stationed in Burmah he had had three attacks of malarial fever, which confined him to bed for periods varying from four to seven days. A month after his arrival in Africa—in March last—he had another attack, but only stayed in bed one day. In each instance the illness came on suddenly with a violent rigor, followed by fever and profuse sweating. His present illness began so insidiously that he could not fix the day of onset, but thought that, roughly speaking, he had been "seedy" for at least ten days; he had had no shivering, no sweating, and was not aware that he was feverish. He said he just felt "tired," and annoyed by the persistent diarrhœa.

The disease ran the usual course of a mild attack of enteric fever (*vide* chart on p. 672); diarrhœa with clay-coloured stools, continued fever, rose spots, enlarged spleen, brown fissured tongue, sordes—in fact all the characteristic signs—being present. Within a week of admission the temperature began to fall, and on June 18th—eleven days after admission, and probably about the twenty-first day of the disease—it had reached normal. On June 15th I began examining the blood of enteric fever patients who had previously had malaria (they were very few in number), and prepared six slides, two from him and one each from four others. In five of the slides I could find nothing, but in the sixth, taken from Lieutenant H., there were unmistakeable crescent bodies, although very small numbers: I could only find three in the whole slide. This was three days before the temperature fell to normal. On June 20th, I again examined his blood, this time finding only two crescents. Early on the morning of the 22nd, he had slight shivering, followed by heat and sweating; and again in the evening the temperature at 10 P.M. being 100°: next day his temperature was subnormal in the morning and normal in the evening. Next day and the two following days it showed the fluctuations traced in the chart, each rise being preceded by rigors and followed by very profuse sweating. I suspected malaria, and again examined the blood on June 27th, when the temperature was subnormal morning and evening, and was rewarded by finding numerous pigmented parasites of the kind figured by Marchiafava and Bignami as "pigmented malignant quotidian"—intracorpuscular pigmented parasites occupying from one to two-thirds of the area of the corpuscles; there were also a few pigmented leucocytes. Next day the parasites were much fewer, but the number of pigmented leucocytes had increased. Since then I have been unable to detect anything abnormal in the blood with the exception of a few crescents on July 4th. The patient's temperature remained subnormal till July 7th, when it became normal, and has since remained so. He is now (July 14th) convalescent, taking chicken and fish diet, is allowed up half the day, and is only waiting the arrival of a hospital train to be invalided to England. His spleen continues enlarged, and there is a certain amount of melanæmia, but all enteric symptoms have disappeared, and he is gaining flesh and colour daily. I did not give quinine until June 27th, since which date he has taken 5 grs. morning and evening. After each sweating the temperature fell from one to three degrees; these falls are not shown on the chart, as the nursing sister only took temperatures twice daily, morning and evening. The malarial fever appears to have been of a "double quotidian" type, as there were two distinct paroxysms daily on June 26th, 28th, and 29th.

THE IMPERIAL YEOMANRY HOSPITAL.

MR. A. D. FRIPP, writing from Deelfontein on July 30th, says: From accounts of officers just down from Pretoria there seems to be very little enteric there or at Johannesburg, and the opinion of those who know the climate and place is that there will not be any increase in that disease until the spring weather sets in at the end of September, when they say we ought to anticipate an even heavier epidemic than the one which is just dying out, unless, as we all hope, the war has ceased, and the bulk of the army has been got out of the country by that time..... Dr. Washbourn has been confined to his bed for a good many days, but is about again now. Mr. Parker has been back at work some time, and Mr. Blathwayt has just returned after several weeks' imprisonment in the scarlet fever camp, but Dr. Elliott and Mr. Greenfield, though quite convalescent, have not yet recovered sufficient strength to return to work..... A smart epidemic of what has now become known as "karroo-itis," has been going the round of the new-comers from England, with just the same symptoms as were presented by those of our own staff who were attacked when we first came. One at least of the many reputed causes of this complaint has disappeared since then, namely, the hot weather, and if a similar process of exclusion can, by comparing notes with other places—for the disease has affected a very wide area—be applied to some of the other theories, we shall perhaps arrive at a true explanation of its cause, and then I hope we shall know how to prevent these distressing symptoms; at present we certainly do not know.

Writing again on August 6th, Mr. Fripp says: This is really little more now than a large convalescent camp. It is extraordinary what a tremendous change has come over the place since a fortnight ago when we were still very busy. We have had no deaths for two whole weeks, and we have not taken in an ambulance trainload for three weeks. Very nearly a hundred Yeomen have been admitted during the week, but they are almost without exception convalescents from other hospitals. For instance, all the wounded, consisting of Warwicks, Gloucesters, and Lancashires, from the action nine weeks ago at Kheis, have come on here from the Orange River Hospital. Just over six hundred officers and men of the Yeomanry have been passed through the hospital since it was opened. Of course, a very large number of Yeomanry have been laid up in other hospitals, it having been found impossible from one cause and another to have them sent here. Thus many in the acute stages of illness it would not be safe to move. Others are laid up in parts of the Free State almost inaccessible to proper hospital transport; but the facilities of collecting in this hospital all those Yeomen who are in a fit condition to travel have been progressively increased daily, and the arrangements to that end are now, I believe, as nearly perfect as the complicated conditions of the case permit. There is, for instance, a standing order at De Aar (which is the next station north of us, and through which all patients going down country must pass), ensuring that every train is warned to stop at Deelfontein and discharge any Yeomanry it may contain. Also directly we hear there are any Yeomanry in a hospital up-country we telegraph to the commandant of that hospital and ask him to send them to us as soon as they are fit to travel. But if we are right in supposing that the number of Yeomanry in South Africa is about ten thousand, we have already had through our hands not less than 6 per cent. of them, a heavy proportion when you consider that none of that limb of the service have been out here for more than five months.

Out of this 600 already treated here, there have only been 4 deaths, while out of the total number of admissions to the hospital of 2,515 there have been in all 59 deaths, a mortality of $2\frac{1}{2}$ per cent., which is attributable almost entirely to enteric. . . .

I was very glad indeed to see that Dr. Conan Doyle had been calling attention in the London press to the arduous and dangerous nature of the work done—and done cheerfully—throughout this war by the hospital orderlies. Among all the brave deeds and hard work done by the various branches of the army during the last ten months, I do not believe that any body of men in Her Majesty's service has excelled, even if it has equalled, in bravery and pluck and continuous, even monotonous laboriousness, the behaviour of thousands of men who have been employed in the hospitals. They have been called upon to do, in addition to a full day's work every day, a full night's work every fourth or third, or even at times of stress every second night. Their work has gone on month after month quietly and unostentatiously without any of the glamour attaching to deeds which catch the public eye. Many of them have died at their work, but very few indeed have grumbled. The service they have rendered to their country has indeed, in the fullest sense of the word, been splendid. Several people have been asking what is to become of this hospital when the war is over. We have not yet heard that any decision has been arrived at, but as I told you many weeks ago my own hope is that it will be taken over as a going concern by the military authorities for the permanent use of the army of occupation, or, failing that, by the civil authorities, in which case it might be worked as a sanatorium

with great advantage to the colony, if not even to the empire. It is a most perfect site for a large hospital, and its establishment is of such a substantial nature that without any but current expenses it could continue its useful work for many years. Every single thing that could be wanted (except, of course, consumable stores) even to the bacteriological laboratory, which is essential nowadays to any such large institution, is to be found here in full working order. . . . We have had, among other visitors, Major Read, R.A.M.C., and Major MacMunn, of the Volunteer Medical Staff Corps, who have been detailed by Lord Roberts to go over and prepare the ground for the investigations of the Medical Inquiry Commission, the members of which will arrive in South Africa on the 21st inst. Major Kilkelly, Grenadier Guards, who has been most fortunately secured to act as commandant of our branch hospital in Pretoria, was stopping here at the time on his way up from Capetown. With these six visitors I spent the whole day, making a complete tour of inspection of the hospital. They went very minutely into details and statistics and seemed very pleased with everything they saw, particularly with the sanitary arrangements, and with the laundry and disinfector and destructor.

In a private letter Mr. Fripp says: I have got a laminectomy doing splendidly—ten weeks' compression of cord by bullet and bone fragments. To-day is the eighth day and I removed all stitches. Wound healed. Much recovery of bladder and of sensation and motion already. Sickness is diminishing persistently and steadily throughout the country.

YEOMANRY BRANCH HOSPITAL, MAITLAND.

Lady Georgiana Curzon has received the following cable in respect to the Imperial Yeomanry Branch Hospital at Maitland: "Have visited Maitland; everything progressing satisfactorily; there are 63 patients under treatment, and 30 others are expected immediately from Beira. All the patients arriving at this hospital belong to the Imperial Yeomanry."

THE EXEMPTION OF HOSPITALS FROM RATING.

THE Report of the Select Committee appointed to consider the operation of the law by which hospitals and other institutions for the care and treatment of the sick or of those afflicted in mind or body, are liable to local rates has been issued, with the proceedings of the Committee, the minutes of evidence, and appendices, as a Bluebook.[1]

THE LEGAL VIEW.

It is pointed out that generally exemption was the rule until 1865, when the House of Lords, by a decision in the case of Jones and others *v.* The Mersey Docks and Harbour Board, held that properties producing no profit to the owners were, under the Statute 43 Elizabeth c. 2, rateable to the relief of the poor. A decision relating to St. Thomas's Hospital established that the principles upon which the Mersey Dock case had been decided applied to the hospital. Hospitals and other charitable institutions thus became in point of law rateable to the poor. Up to the time of the decision in the Mersey Dock case it had always been assumed that hospitals and other similar institutions were exempt.

Since the decision of the House of Lords, although in many cases the rating authorities have acted with great consideration, going so far in some cases as to leave hospitals off the rating book entirely, yet these institutions have been rated for the relief of the poor, for school rates, and also for general purposes. In some instances, such as the London Hospital, and in certain localities such as Birmingham, Shrewsbury, and Halifax, hospitals are exempted from rates by local statutes, and the Royal Infirmary at Edinburgh is exempt from municipal rates by statute. In Ireland all hospitals and other charitable institutions are exempt. It thus appears that numerous anomalies exist in the rating of hospitals, and that in different localities the various rating authorities take diametrically different views as to the obligation of hospitals to pay rates.

THE ARGUMENT FOR EXEMPTION.

The Committee is of opinion that there can be no doubt as to the force of the claim for exemption set up by the hospital authorities when viewed from a philanthropic standpoint. Hospitals are everywhere doing a great work in relief of human suffering. They are almost always hard pressed for funds. They to a great extent relieve the rates, and it was established by evidence that were the exemption from rates granted in London, several hundred additional beds could be provided, while the increase thrown upon the ratepayer would be merely nominal. Evidence to this effect was also given from Liverpool.

It has been suggested that if relief were granted to hospitals and similar institutions, it would be impossible to resist the claims of other charitable institutions of a different kind, and that consequently there would be no logical stopping place short of the principle adopted by the Legislature in Ireland by which relief is granted to all charitable institutions as well as hospitals. With regard to this the Committee points out that there are considerations which distinguish voluntary medical hospitals from all other charitable institutions; they are absolutely necessary everywhere; they assist all classes; they are generally open at all hours for the admission of the suffering without inquiry or recommendation; they prevent the spread of disease; they advance the cause of education and science. Hence the Committee has been led to regard this difficulty as not of itself sufficient to prevent it from recommending that exemption should be granted.

RECOMMENDATIONS.

The Committee recommends that the principle of exemption from rates should be applied to all medical hospitals, infirmaries, or other institutions for the care and treatment of persons suffering from sickness or injury, or afflicted in mind or body, not carried on for profit or gain, and supported wholly or in part by voluntary contributions or endowments and directly benefiting the rates in the county or district in which they are located to a greater extent than they pay rates. It is further recommended that any Bill introduced to give effect to this principle should confer power upon the rating authorities to deal with the question either wholly or in part, and that where the rating authority does not act under this provision such institutions may appeal to the County Council, or such body as is the central rating authority, and that these bodies should exempt such hospitals or hospital from rates provided that they come within the above-named definition.

It is also recommended that the central rating authority should be empowered to arrange for the distribution of the loss inflicted by exemption in any one rating area over those areas which are directly benefited by the hospital or other institution, or to make good the loss out of the county fund, and should be allowed to make any grant out of the county fund to relieve the rates assessed upon hospitals or other institutions which in their discretion they may think proper.

[1] To be purchased, either directly or through any bookseller, from Eyre and Spottiswoode, East Harding Street, Fleet Street, E.C., and 32, Abingdon Street, Westminster, S.W.; or John Menzies and Co., Rose Street, Edinburgh, and 90, West Nile Street, Glasgow; or Hodges, Figgis and Co., Limited, 104, Grafton Street, Dublin.

AT the midsummer meeting of the Austin-Flint Medical Association at Clear Lake, Iowa, U.S.A., a vote of thanks was passed to Dr. C. Y. Pearson, of Cork, for his services to the son of a member of the Association. Dr. Pearson was at the same time elected an honorary member of the Association.

PRINCE OF WALES'S HOSPITAL FUND.—Among the latest contributions received at the Bank of England for the Prince of Wales's Hospital Fund for London is the annual subscription of £1,000 from the Drapers' Company. The clerk to the company, Mr. W. P. Sawyer, when forwarding the cheque, wrote that "the Company learnt with much satisfaction from the last report of the Prince of Wales's Hospital Fund that the committee have appointed visiting subcommittees consisting of persons practically acquainted with hospital management with the object of obtaining information as to the merits and needs of the various institutions. The Company regard this as a most important step towards promoting the well-being of metropolitan medical charities and strengthening their claims on public benevolence."